

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attorney Docket No. 11722US02

In the Application of:
Kapoor et al.

Serial No.:

Filed:

EL 849005800 US
EXPRESS MAIL NO.

For: **Method and Apparatus for
Interference Suppression in
Orthogonal Frequency Division
Multiplexing (OFDM) Wireless
Communication Systems**

October 11, 2001
DATE

Examiner:

Group Art Unit:

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Examiner:

This Amendment is a preliminary amendment filed prior to an Office Action.

Please amend the application as follows:

IN THE CLAIMS

Please cancel claims 7-28.

Please add the following new claims:

35. (New) An adaptive antenna array architecture for communication, said architecture comprising:

- a plurality of adaptive antenna arrays for signal reception;
- an array fixation structure for mounting said plurality of adaptive antenna arrays;
- an array support structure for positioning said array fixation structure at a desired elevation; and
- a base station for controlling said adaptive antenna array architecture.

36. (New) The architecture of claim 35, wherein said plurality of antenna arrays comprise a plurality of sub-arrays.

37. (New) The architecture of claim 36, wherein said plurality of sub-arrays is spaced sufficiently to obtain spatial diversity.

38. (New) A signal receiver for receiving communications signals, said receiver comprising:

- an adaptive array for receiving signals from remote units;
- a plurality of demodulator units for processing said signals;
- a plurality of beamformers for constructing a desired signal response; and
- a spatial diversity combiner for removing interference from said signals.

39. (New) The receiver of claim 38, further comprising a direction of arrival processor for calculating a direction of arrival for said signals.

40. (New) The receiver of claim 38, further comprising an orthogonal frequency division multiple access unit for segmenting available bandwidth into a plurality of frequency bins for allocation.

41. (New) A method for reducing signal interference, said method comprising:
assigning at least one frequency bin to a user;

spacing said at least one frequency bin belonging to said user to at least one sufficiently different frequency to reduce inter-bin interference; and

locating said at least one frequency bin with at least one frequency bin of other users such that directions of arrival for said users are distinctly separable.

42. (New) A method for suppressing interference in communications signals, said method comprising:

partitioning available bandwidth into a plurality of frequency blocks, said frequency blocks comprising a plurality of bins;

assigning a user to a bin in each of said frequency blocks; and

using spatial information to distribute said bins within said frequency blocks.

43. (New) A method for allocating communication bandwidth, said method comprising:

assigning a first remote user to a first frequency bin; and

assigning a second remote user to a second frequency bin such that directions of signal arrival for adjacent frequency bins differ.

44. (New) A method for avoiding interference in communications signals, said method comprising:

partitioning available bandwidth into a plurality of frequency blocks, said frequency blocks comprising a plurality of bins;

assigning a user to a bin in each of said frequency blocks; and

using signal power information to distribute said bins within said frequency blocks.

REMARKS

The present application includes claims 1-34. Claims 7-28 are cancelled as they are being pursued in the parent application. Applicant respectfully requests that claims 35-44 be added to reflect the subject matter of the claimed invention.

Thus, the Applicants respectfully submit that claims 1-6 and 29-44 should be in condition for allowance.

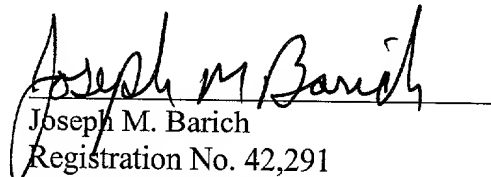
CONCLUSION

The Applicant thanks the Examiner and looks forward to working with the Examiner to resolve any remaining issues in the application.

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Account No. 13-0017.

Respectfully submitted,


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October 11, 2001

Date

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